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Rose, A., Allen, R., & Fulton, K. ().**Multiple Channels of Electronic Communication for Building a Distributed Learning Community**

. These learning communities, or "communities of practice" (Lave & Wenger, 1991), can be powerful vehicles for personal growth and learning, settings in which knowledge is developed collaboratively based on common interests, practices, tools, discourses, and shared values, goals, and activities (Pea & Gomez, 1992; Reil and Fulton, 1999; Ruopp, et al., 1993).

that consisted primarily of short workshops or formal coursework. Like just-in-time models of employee training in industry, learning communities offer teachers customized and flexible opportunities to learn from peers at times that are convenient for them. According to Darling-Hammond and McLaughlin (1995, as cited in Darling-Hammond, 1999)), the best models of professional development are those that are:

* Experiential, engaging teachers in concrete tasks of teaching, assessment, and observation that illuminate the processes of

learning and development;

* Grounded in participants' questions, inquiry, and experimentation as well as in profession-wide research;
* Collaborative, involving a sharing of knowledge among educators;
* Connected to and derived from teachers' work with their students as well as involving examinations of subject matter and teaching methods;
* Sustained and intensive, supported by modeling, coaching, and problem solving around specific problems of practice; and
* Connected to other aspects of school change.
* MELC was designed to create and document how an electronic learning community of teachers could be created around the development and use of a multimedia digital library for teacher generated interactive lesson plans (Marchionini et al., 1997).

When the project began, most of the teachers had no computers in their classrooms and little technology expertise or exposure to technology integration in the classroom. Now in the fifth and final

. Just getting comfortable with the technology has been a challenge for many of the teachers. As a result, professional development has been a critical element of the project.

Using the technology provided, the goal is to create an electronic community of teachers who create and share interactive lesson plans for use in their classrooms. To aid the creation of these

. Just getting comfortable with the technology has been a challenge for many of the teachers Some of this has been due to technical problems with both hardware and software. As is the case in many technology projects, a few early adopters have moved along rapidly.

. But growth has been, for many, quite dramatic since the inception of the project.rather than the more advanced levels or technology use (i.e., adaptation, appropriation, or invention Professional development has been a critical element of the project

During the past1998-99 school year (the fourth year of the project), a turning point seems to have been reached in terms of teachers' greater involvement with the project and comfort level with technology. We have seen evidence of more communication, more interactions among teachers, and a greater sense of community.

. However, observations and interviews with teachers suggest that the creation of alternate communications venues has been an important reason for in the increased sense of community in the project. This paper deals with the impact to date found for two of these new communication channels, the development of past year a threaded discussion board (called MELChat) was created and the creation and use of four distance learning laboratories (DLLs)were built and we believe these new communication channels have contributed significantly to the increased sense of community.

Communities and friendships tend to develop among people who communicate frequently. Kraut and Egido (1988) have demonstrated that this proximity effect is also observed among people who communicate electronically.

). There is also a high volume of "thank you" and congratulatory messages which seem to foster a greater sense of pride in the community

For instance, teachers reported that their students were more motivated and paid better attention when they were using the distance learning lab. Some teachers noted that bringing classes together via video caused much less confusion than bringing them together in person. For some lessons involving detailed manual work by the teacher (i.e., folding paper airplanes to test various flight designs) the document camera was particularly helpful in showing close-ups of what the teacher was doing.

Time, distance, and a lack of shared goals and activities can form barriers to community, but the MELC project suggest one model of how Nonetheless, in MELC we are finding evidence that technology can bridge these barriers. Still, the technology itself can

But for many, it was a question of getting past a personal critical point of comfort. As one teacher said, "Now that I know how to logon, I will continue to participate actively.". " An important factor has been developing a shared vision of what can be done with technology�a vision that is gradually built, shared, and nurtured in the electronic venues of the "face to face" interactions experienced in the Distance Learning Lab and the asynchronous reflections and conversations of the MELChat.

Teachers need multiple vehicles of support if they are to work and interact as a true learning community. It is possible that many channels of communication synergize with each other and that the combination is more effective than each channel would be separately. Different people have different roles, different styles, and different goals for communication; multiple complimentary types of interaction provide channels for people with those differing characteristics. Schools are information-rich environments, and teachers have expertise that can be captured and shared in multiple ways.

Enhancing human communication by technology is likely to be a powerful tool for improving schools. It suggests that a larger goal for technology use and school reform should be an explicit focus on community building.

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